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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/709,413 | 05/04/2004 | Yu-Jie Zhao | 46863 | 3412 |

31561 7590 09/30/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

| EXAMINER | |
|---|---|
| YU, MELANIE J | |
| ART UNIT | PAPER NUMBER |
| 1641 | |

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/709,413 | ZHAO, YU-JIE | |
| | Examiner | Art Unit | |
| | Melanie Yu | 1641 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. Applicant's amendment filed 14 July 2005 has been entered. Claims 1, 4 and 5 are currently amended. Claims 1-9 are currently pending in this application. Claims 10-20 are cancelled.

### *Withdrawn Rejections*

Previous rejection of claims 1-9 under 35 USC 112, second paragraph, 35 USC 102(b) and 35 USC 103(a) have been withdrawn in light of applicant's arguments and amendments.

### *Claim Rejections - 35 USC § 102*

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackburn (US 2003/0190608).

Blackburn teaches a method of fabricating a cell detection chip, comprising: selecting a plurality of probe molecules, wherein an affinity exists between each of the probe molecules and one of corresponding antigens on a cell membrane (different capture probes are specific for analyte, par. 150; analyte are antigens on cell membranes, par. 103); modifying the plurality of probe molecules to facility an immobilization of the probe molecules onto a matrix (par. 162); and spotting the probe molecules respectively onto respective positions of the matrix (par. 152-153).

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 4-6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Okamoto et al. (US 2003/0059817) in view of Kapur et al. (US 6,548,263).

With respect to claims 1, 2 and 6, Okamoto et al. teach a method of fabricating a cell detection chip, comprising: designing a plurality of probe molecules, wherein an affinity exists between each of the probe molecules and one of corresponding specific molecules (par. 0056); synthesizing a plurality of probe molecules (par. 0046, 0056); spotting the probe molecules respectively on a matrix (par. 0056); and incubating the matrix to keep the matrix under a wet environment (support stood in a humid chamber for 30 minutes, par. 0056). Okamoto et al. fail to teach specific molecules being on a cell membrane.

Blackburn teaches a spotted array comprising probe molecules (col. 13, lines 50-67; col. 14, lines 53-55) wherein the corresponding specific molecule (analyte) is an antigen on a cell membrane (col. 15, lines 62-67), in order to provide a high throughput specific cell-type binding microarray.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in the method of Okamoto et al., specific molecules on the surface of cell membranes as taught by Kapur et al., in order to provide high biological content screening for drug candidates by analysis of drug-cell interactions when a small number of cells and large volumes of compounds required for testing.

Regarding claims 4 and 5, Okamoto et al. teach designing probe molecules comprising a plurality of location indication probes (par. 0118) and the step of synthesizing the probe molecules, further comprising the step of dissolving probe molecules in a solvent to form a solution of the probe molecules (probe molecules are mixed in a solution, par. 0056).

With respect to claim 9, Okamoto et al. teach a spot diameter between 20 and 100 μm (par. 0033), which encompasses the recited range of a spot radius between 50 and 500 μm.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (US 2003/0059817) in view of Kapur et al. (US 6,548,263), as applied to claim 1, and further in view of Chen et al. (US 6,594,432).

Okamoto et al. in view of Kapur et al., as applied to claim 1, teach a method of fabricating a cell detection chip, but fail to teach the step of designing probe molecules further comprising designing a plurality of quality control probes.

Chen et al. teach using a plurality of quality control probes (col. 7, lines 10-22), in order to inspect microarrays after their formation.

Therefore it would have been obvious to on having ordinary skill in the art at the time the invention was made to include in the designing step of the method of Okamoto et al. in view of Kapur et al., designing a plurality of quality control probes as taught by Chen et al., in order to determine if probes have been deposited.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (US 2003/0059817) in view of Kapur et al. (US 6,548,263) further in view of Oprandy (US 5,200,312).

Okamoto et al. in view of Kapur et al., as applied to claims 1 and 6, teach a method of fabricating a cell detection chip and a step of cleaning after incubation (par. 0116), but fail to teach a step of drying after an incubation step and before cleaning.

Oprandy teaches a step of drying (col. 4, lines 11-19), in order to store an antibody bound membrane for later use.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in the method of fabricating a chip after the step of incubation

and the step of cleaning of Okamoto et al. in view of Kapur et al., a step of drying as taught by Oprandy, in order to ensure the probe has completely bound to the matrix.

With respect to claim 8, Okamoto et al. teach after the step of cleaning, steps of: blocking portions of a surface of the matrix not spotted with probes, wherein a blocking solution is used (immersed in bovine serum albumin to proceed blocking reaction, par. 0116); and further cleaning the matrix (matrix is washed after hybridization reaction, par. 0118).

***Response to Arguments***

6. Applicant's arguments, see pages 5-7, filed 14 July 2005, with respect to the rejection(s) of claim(s) 1-9 under 35 USC 112, second paragraph and 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a specific molecule present *on a cell membrane*.

***Conclusion***

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Yu whose telephone number is (571) 272-2933. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melanie Yu
Patent Examiner
Art Unit 1641

LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

09/23/05